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October 26, 1993

Ms Bonita Lavelle
U S Environmental Protection Agency, Region 8
999 18th Street
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Subject Technical Review of Appendix A of Technical Memorandum No. 12, Human Health Risk Assessment, Exposure Scenarios Rocky Flats Plant, Woman Creek Priority Drainage, Operable Unit 5
Contract Number 68-W9-0009, Work Assignment Number C08058

Dear Ms Lavelle

PRC Environmental Management, Inc (PRC), reviewed Appendix A of the above referenced document at your request The appendix presented a domestic water supply simulation for groundwater at operable unit (OU) 5 of Rocky Flats Plant (RFP) This letter contains PRC's review comments

The document asserted that the quantity of groundwater at OU5 would be insufficient to support a domestic well This assertion was used as a reason to exclude groundwater exposure pathways from the human health risk assessment Based on data presented in Appendix A of the technical memorandum, PRC disagrees with the conclusion for the following reasons

This modeling exercise did not include a simulation of groundwater supply in the Woman Creek valley fill alluvium This unit should be included in any consideration of groundwater pathways at OU5 because field data indicate that the alluvium may be a potential supply of domestic well water

The value of hydraulic conductivity used for the model simulation of groundwater supply in the Arapahoe sandstone unit at OU5 may not be representative of site conditions The text states the simulation used the geometric means of hydraulic conductivity values from aquifer tests performed in the Arapahoe sandstone unit as the input parameter However no reference was given for the data

The Draft Background Pumping Test Analysis (EG&G, 1991) includes pumping and slug test results from two wells located in OU5 These two wells, B405889 and B402189, are located in the central portion of OU5 near the surface disturbance south of the ash pits Hydraulic conductivities calculated from the pumping test data from these wells were 22 6 feet per day (ft/d) at B402189 and 5 7 ft/d at B405889 Both values are considerably higher than the value of 0 0402 ft/d used in the model Furthermore, well B405889 was pumped for 8 hours at an average flow rate of 6 14 gallons per minute (gpm), which indicates that there is a sufficient quantity of water in the Arapahoe sandstone at OU5 to sustain domestic well use

Additionally, page 4-6 (paragraph 6) of the text states "based on ground-water flow simulations presented in Appendix A ingestion of groundwater from the Upper Hydrostratigraphic Unit (UHSU) is not capable of supporting a household of four for more than 2 days " The text also indicates that

direct ingestion of groundwater is an incomplete exposure pathway It is not necessary to perform groundwater modeling to conclude that the potential for domestic use of groundwater exists at OU5 Field data collected at Woman Creek (in OU5) during the OU1 investigation shows that a wellpoint located in the Woman Creek valley fill alluvium was pumped at a rate of 1 5 gpm for 8 hours without depleting the source of groundwater (EG&G 1992) Furthermore, this test was conducted in December, which typically has the lowest water levels of the year A test conducted during the spring or summer months would generate even more water Based on this information, groundwater ingestion is a potentially complete pathway and should have been included as an exposure pathway in the future on-site residential scenario

If you have any questions or comments, please contact Jim Wulff or me at 295-1001

Sincerely,

Theresa K Lopez

Theresa K Lopez
Toxicologist

cc Martin Hestmark, EPA
Jim Wulff PRC
Gary Miller, PRC

References

EG&G 1991 Draft Background Pumping Test Analysis Rocky Flats Plant, Golden, Colorado November 1991

EG&G 1992 Draft Final Phase III RFI/RI Report, Rocky Flats Plant, 881 Hillside Area (Operable Unit 1), Volume VII, October 1992 Rocky Flats Plant, Golden Colorado

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